Public Service Commission of Wisconsin

Rebecca Cameron Valcq, Chairperson
Ellen Nowak, Commissioner
Tyler Huebner, Commissioner

4822 Madison Yards Way
P.O. Box 7854
Madison, WI 53707-7854

June 11, 2020

Re: Application of Superior Water, Light and Power Company for Approval to Implement a Community Solar Garden Program — 5820-TE-100

Comments Due:	Address Comments To:
Thursday, June 25, 2020 – 1:30 p.m.	**Steffany Powell Coker** Public Service Commission P.O. Box 7854 Madison, WI 53707-7854
This docket uses the Electronic Records Filing (ERF) system.	

To the Parties:

The Commission Memorandum concerning the application of Superior Water, Light and Power Company for approval to implement a community solar garden program is being provided to the parties for comment. Comments must be received by 1:30 p.m. on Thursday, June 25, 2020. Party comments must be filed using the Commission's ERF system. The ERF system can be accessed through the Public Service Commission's web site at http://psc.wi.gov. Members of the public may file comments using the ERF system or file an original by mail at the Public Service Commission, 4822 Madison Yards Way, P.O. Box 7854, Madison, Wisconsin 53707-7854.

Please direct questions about this docket or requests for additional accommodations for the disabled to the Commission's docket coordinator Andrew Kell at (608) 266-1124 or andrew.kell@wisconsin.gov.

Sincerely,

Steffany Powell Coker
Secretary to the Commission

SPC:AMK:cmb:jlt:DL: 01733042

Attachment

PUBLIC SERVICE COMMISSION OF WISCONSIN

Memorandum

June 11, 2020

FOR COMMISSION AGENDA

TO: The Commission

FROM: Martin R. Day, Administrator
Sherry Colstad, Bureau Director, Rates and Finance
Jackie Madsen, Bureau Director, Audit and Accounting
Andrew Kell, Public Utility Rates Analyst
Nick Schuster, Public Utility Auditor
Division of Energy Regulation and Analysis

RE: Application of Superior Water, Light and Power Company for Approval to Implement a Community Solar Garden Program — 5820-TE-100

Suggested Minute: The Commission (approved/modified and approved/did not approve) the application of Superior Water, Light and Power Company for approval to implement a community solar garden program.

Introduction

On January 9, 2020, Superior Water, Light and Power Company (SWL&P) filed an application with the Commission for approval to implement a community solar garden program. (PSC REF#: 381979.) The Commission issued a Notice of Investigation on January 23, 2020. (PSC REF#: 382706.) RENEW Wisconsin (RENEW) requested to intervene and was granted intervenor status. (PSC REF#: 384541.) None of the parties requested a public hearing, and no hearing was required or held.

SWL&P Proposal Overview

SWL&P proposes to develop a 470 kilowatt[1] (kW) solar facility (project) and design a community solar garden program (Superior Solar), in which SWL&P retail customers will have

[1] 470 kW is the alternating current-rated capacity of the project. The direct current-rated capacity of the project is 614 kW. (PSC REF#: 387839.)

the option to voluntarily subscribe and purchase energy from the project. SWL&P proposes to site the project within the City of Superior, and would own and operate the project. The project is expected to have at least a 25-year useful life, with a fully-loaded capital cost estimated to be $1.13 million, and total revenue requirement estimated to be $2.067 million that includes all capital, operations and maintenance (O&M), financing, and other associated costs.

The project will be sited on SWL&P-owned land, where it would be interconnected into SWL&P's distribution system and visible to the community. In response to Commission staff data request NAS-3.5, SWL&P proposes to install 5-foot tall chain link fencing around the project. Per response to Commission staff data request NAS-3.6, the project would be arranged in a "portrait" orientation on the SWL&P property, which SWL&P claims allows for 30 percent more panels on the land area than a traditional "landscape" orientation. (PSC REF#: 387839.) SWL&P used a Request for Proposal (RFP) process in order to choose a winning bid, which will be further described below.

The Superior Solar program would be a voluntary tariff option available to all retail customers; however, no individual customer could subscribe to over 25 percent of the nameplate capacity. SWL&P aims to balance subscriptions at 75 percent for commercial customers and 25 percent for residential customers. There are three payment options open to subscribing customers: option one, an upfront payment; option two, a flat monthly subscription payment; and option three, a fixed charge per kilowatt-hour (kWh) related to the energy production and subscription amount from the project. These payment options will be further described below in comparison to other utility community solar programs. SWL&P has designed all three payment options to recover the total estimated revenue requirement of the project from participating customers at no cost to non-participating customers. SWL&P assumes a 25-year useful life for the project, and also bases its depreciation schedule and subscription contract terms on this

25-year period. SWL&P believes the program will quickly become fully subscribed as a voluntary option for its retail customers, however as described below if the program is not fully subscribed there is risk for non-participant cross subsidization.

Prior Commission-approved Utility Community Solar Programs

Several Wisconsin utilities have received Commission approval to implement community solar programs that are similar to the upfront fee structure that SWL&P is proposing in payment option one, in which the customer pays for the full subscription cost upfront and then receives monthly bill credits with no other ongoing payment for the duration of the contract. Northern States Power Company–Wisconsin (NSPW) received approval from the Commission to implement a community solar program on May 27, 2015, in docket 4220-TE-101. (PSC REF#: 236916.) On August 21, 2015, the Commission approved of the applications of both New Richmond Municipal Electric Utility (New Richmond) and River Falls Municipal Utility (River Falls) in docket 5110-TE-102. (PSC REF#: 273771.) Finally, Wisconsin Power and Light Company (WP&L) received approval from the Commission to implement a community solar program in docket 6680-TE-104 on July 19, 2019. (PSC REF#: 372550.) These community solar programs will be compared with SWL&P's payment option one fee structure below. Early program results gathered through annual reports show that these community solar programs quickly became fully subscribed. An exception is New Richmond, which still has subscription blocks available per their annual report. (PSC REF#: 387520.)

No other Wisconsin utility has proposed a community solar program fee structure similar to SWL&P's proposed payment option two, in which the customer makes flat monthly subscription payments over the course of the contract. However, other renewable rider programs have a similar payment structure, as noted below.

There is one Wisconsin utility's community solar program fee structure that resembles SWL&P's payment option three, in which the customer locks into a fixed charge per kWh, which equates to the levelized price for solar energy. On April 1, 2016, the Commission approved of Madison Gas and Electric Company's (MGE) community solar pilot project in docket 3270-TE-101. (PSC REF#: 284022.) After subscriptions for the 500 kW pilot were quickly subscribed at capacity, MGE applied to the Commission to expand up to 4 megawatts (MW) and modify the program and rate structure in docket 3270-TE-104, and received approval from the Commission on July 30, 2019. (PSC REF#: 373113.) MGE's community solar program, also referred to as Shared Solar, allows residential and commercial customers to pay a small upfront fee, and then lock into a fixed charge[2] per kWh over the course of the contract to commensurate with the cost of the solar facilities and service. Instead of the customer paying the energy charge in its rate class, the participating customer pays the community solar rate for the amount of kWh production from the solar facility under subscription. Further comparison of MGE's fee structure with SWL&P's payment option three is described below.

Superior Solar – Payment Option One

SWL&P provides three payment options that customers may choose in order to participate in the Superior Solar tariff: option one, an upfront payment; option two, a flat monthly subscription payment; and option three, which has no flat payment, but a fixed charge per kWh that is applied to the project's production on every monthly bill. All three payment options require the same reservation fee, and incorporate all the capital, O&M, financing, and other costs of the project into the fee structures. All three payment options also provide a

[2] There are components of MGE's Share Solar charge that could fluctuate with time, which is described below.

monthly energy credit approach that corresponds with the subscription amount and the actual production from the project, which is described in more detail below.

Commission staff notes that there is a financial risk difference between the nature of guaranteed flat customer payments of SWL&P's proposed upfront payment (option one) or flat monthly subscription payments (option two), and the fixed charge per kWh payment (option three) that will fluctuate with energy production. For example, if the project produces much less energy than SWL&P anticipates, SWL&P is still made financially whole on the project's investment with payment options one and two if fully subscribed, which have guaranteed flat subscriber fees. However, under payment option three SWL&P would receive much less revenue from subscribers in this scenario, as the fixed charge of $0.143 per kWh would be applied to much less energy than anticipated. In other words, SWL&P's payment options one and two provide more risk to subscribers, while payment option three keeps the revenue requirement risk with the utility. Of course if the project produces more than anticipated, SWL&P would receive more revenue from option three subscribers, but would also have to pay more bill credits to option one and two subscribers with no additional revenues. As described in more detail in the Payment Option Three section, SWL&P assumes an 18 percent capacity factor for production from the project, which degrades in percentage over the life of the project.

There is also risk to SWL&P if 100 percent subscription is not realized after the program is made available. Additionally, per the "Waiting List and Cancellation Policy" section of SWL&P's application on page 8, SWL&P states that "SWL&P will allow subscribers the ability to opt out of the program at any time per written request." Cancellation is more of a risk for payment options two and three below. However, SWL&P believes these undersubscription and participant cancellation risks are minimal. Per response to Commission staff data request NAS-2.1, SWL&P states: "Through stakeholder engagement with interested participants,

SWL&P expects Superior Solar to be fully subscribed before the project is in service. Discussions with potential participating commercial customers indicates that most of them will choose the upfront payment – option 1. The result is that SWL&P anticipates capturing a majority of the initial capital costs at the beginning of the project." (PSC REF#: 386497.)

Payment option one, which SWL&P calls the "upfront payment" option, is simple in that the customer pays a flat fee upfront. Based on SWL&P's depreciation schedule and subscription pricing model, SWL&P calculates the total levelized revenue requirement to be $2,440.82 per kW subscription block. After the customer pays $122.04 per kW for the reservation fee, the upfront fee remaining is $2,318.78 per kW.

The participating customer then receives a monthly kWh energy credit each month that offsets the energy charge of the customer's class for the applicable project kWh production that month under subscription. Since the participating customer has paid for the project upfront through the Superior Solar program, the customer essentially receives prepaid energy that is associated with the project's production. For example, if a one kW portion of the project under subscription produces 80 percent of the customer's energy use that month, the customer will ultimately only pay the energy charge of the customer's class for the remaining 20 percent of energy use that month. Both energy charges and energy credits are subject to Power Cost Adjustment Clause (PCAC) monthly adjustments, and the customer must still pay other applicable utility charges such as customer charges, and demand charges for commercial customers.

In response to Commission staff data request AMK-1.3, SWL&P shows how this will be displayed on customers' bills. For an upfront payment residential customer, an ongoing fee of $0 is displayed on the customer's bill. While the customer used 502 kWh of electricity in the bill example, the project's subscription portion produced 103 kWh. The customer only has to pay

the net difference, 399 kWh, which is applied to the customer's $0.115/kWh energy fee for the residential customer's class and is also subject to the PCAC adjustment. If the project's subscription portion produces more than the customer uses in a particular month, the customer will pay no energy charges that month, and the excess kWh will rollover as a kWh energy credit the next month. (PSC REF#: 386280.)

Most Wisconsin utilities that have received approval from the Commission for community solar programs are similar in payment structure to SWL&P's payment option one, upfront payment. However, these utilities base the energy credit calculation on values other than SWL&P's proposed full retail energy charge. NSPW's energy credit is based on cost-of-service study results for production costs embedded in the customer retail rate, and is subject to adjustments in future rate cases. WP&L's energy credit is based on a combination of wholesale energy prices and WP&L's own embedded production costs, and is also subject to future rate case adjustments. River Falls and New Richmond energy credit values are based on a common proposal from their wholesale power provider, WPPI Energy (WPPI). Under WPPI's Commission-approved proposal, River Falls and New Richmond base credits on a levelized avoided cost calculation considering energy, capacity, and transmission values, which make up a portion of the customer's retail energy charge. In contrast to these other approaches, SWL&P's proposal for energy credits is inclusive of all the costs embedded in the customer's full retail energy charge. An example of a residential customer participating with one kW subscription under SWL&P's proposed payment option one is compared with upfront fees and credits from other utility community solar programs in Table 1 below.

Table 1 Comparison of Fees and Credits for 1 kW Residential Subscription

Utility	Total Capacity (MW)	Upfront Fee/kW	Credit ($/kWh)
NSPW	3	$1,600	$0.074
WP&L	6	$1,200	$0.063
WPPI	1	$1,800	$0.076
SWL&P (Option One)	0.47	$2,441	$0.115

SWL&P's upfront payment (combined reservation and upfront fee) is about twice the amount as WP&L's upfront program fee. This could partially be explained by the 6 MW economies of scale facility that WP&L received Commission approval for, which is much more than the 0.47 MW project that SWL&P is proposing. The WPPI facility for New Richmond and River Falls is 1 MW in capacity, but still $600 less per kW subscription block than SWL&P's proposal. However, SWL&P does propose the highest credit for the project's production on a kWh basis. As SWL&P bases the credit on the full retail energy charge of the customer's class, the $0.115/kWh credit for residential participants would be higher than the embedded cost credits that the other utilities offer. While it would be more costly for SWL&P customers to subscribe to SWL&P's proposed Superior Solar program than NSPW's, WP&L's, and WPPI members' programs, SWL&P does propose a more generous basis for bill credits than these other utility programs.

By proposing a full retail energy charge credit, there is some risk that SWL&P would be providing more credit than that which the project provides service to the participants. NSPW, WP&L, and the WPPI utilities proposed credits based on only embedded potions of the full retail energy charge. These utilities likely proposed the embedded cost or avoided cost methods described above because they believe their community solar projects only serve a portion of the customer's energy needs. Essentially these utilities based their proposed credits on those portions of service the solar projects could supplant from the utilities normal generation fleet or purchased power costs. If the Commission believes SWL&P's proposed reference to the

customer's full energy charge is too high in comparison to embedded cost or avoided cost basis for bill credits approved for other Wisconsin utilities, the Commission could direct SWL&P to provide additional cost-of-service analysis and propose an alternative approach. For example, the Commission could determine that the WPPI credit methodology of valuing the avoided cost of energy, capacity, and transmission is a more reasonable approach. SWL&P is similar to the WPPI members of River Falls and New Richmond, in that they are utilities dependent upon purchased power from wholesale providers.

In this case, the Commission could require SWL&P to work with Commission staff and file an embedded cost analysis, breaking down avoided wholesale costs for energy, capacity, and transmission, with both residential and commercial customer results. This WPPI approach to avoided costs could then be used as the basis of the Superior Solar bill credits for both residential and commercial customers who choose the upfront payment option. Alternatively, the Commission could choose the bill credit approach approved for NSPW, WP&L, or another approach per Commission discussion.

Commission Alternatives – Payment Option One

Alternative One: Accept SWL&P's proposed payment option one, with SWL&P's proposed bill credits based on the full energy charge of the participating customer's class.

Alternative Two: Accept SWL&P's proposed payment option one, but direct SWL&P to use WPPI's approach for bill credits, and work with Commission staff to file an analysis of avoided costs of energy, capacity, and transmission in order to value residential and commercial bill credits.

Alternative Three: Accept SWL&P's proposed payment option one, but direct SWL&P to use an alternative approach for bill credits based on Commission discussion.

Alternative Four: Do not accept SW&P's proposed payment option one.

Superior Solar – Payment Option Two

The proposed payment option two, which SWL&P calls a "monthly subscription", is similar to option one in that it is a flat fee. However, rather than pay one fee upfront like option one, payment option two levelizes the cost to participate in flat monthly subscription payments over the course of the contract. As described above in the section on payment option one, option two does carry both an undersubscription and contract cancellation risk for SWL&P, as the customer can cancel its subscription contract at any time without ability for SWL&P to collect the remaining subscription blocks unless another customer takes up the subscription.

Under option two, the participating customer would pay the same reservation fee of $122.04 per kW of the project as payment option one. Since SWL&P would not receive all the participation costs upfront, SWL&P also integrates the time value of money of future monthly payments. Per SWL&P's response to Commission staff data request AMK-1.1, the present value of all the costs of the project are the same as the present value of future revenue streams with a flat monthly subscription of $17.11 per month, which ensures the project's revenue requirement is the same as subscription payments. (PSC REF#: 386279.) After removal of the upfront reservation fee, the flat monthly payment that SWL&P proposes is $16.25 per kW subscription per month for payment option two. Monthly energy credits associated with production from the subscribed portion of the project will be displayed on the customer's bill the same way as described for payment option one above, although option two customers will have ongoing fees of $16.25 per kW per month.

Customers interested in participating in the proposed Superior Solar program may be more interested in payment option one if they would like to make the upfront payment and not worry about future payments related to the project on their utility bills. Other customers may also like the certainty of a flat payment for participating in Superior Solar, but would rather make small monthly payments over the course of the contract in order to pay for the project.

No other Wisconsin utility community solar program offers a flat monthly payment, such as what SWL&P offers with payment option two. However, Wisconsin Electric Power Company (WEPCO) has a similar flat monthly payment structure for its Dedicated Renewable Energy Resource (DRER) rider program. This WEPCO program allows WEPCO to contract for the procurement of renewable resources with its customers, and the monthly flat fee to participate in the program depends upon the cost of the particular resource under contract. Participating DRER customers also receive bill credits dependent upon the contracted resource's production. The Commission approved the WEPCO DRER application in docket 6630-TE-102 on December 28, 2018. (PSC REF#: 356192.)

SWL&P proposes the same basis of bill credits for payment option two as described above for payment option one. Customers who choose payment option two will also receive monthly bill credits, in which production from the subscribed portion of the project reduces the customer's net energy use, and therefore reduces the participating customer's energy charge costs. Whether or not a net reduction to the customer's bill occurs as a result of participating in the program depends on the project's monthly production, and whether the bill credit total exceeds the monthly flat fee to participate.

The Commission may wish to assess the appropriate methodology for bill credits for payment option two with the same assessment and Commission decision for payment option one as described in the previous section. The comparison to other utility approaches for community

solar bill credits, which is summarized in Table 1 in the previous section, is also applicable to payment option two, except that SWL&P's upfront fee is levelized into flat monthly payments.

The same possible risk of SWL&P providing too high of a bill credit in payment option one, in comparison to other utility community solar bill credits, also exists for payment option two. If the Commission decides an alternative bill credit is appropriate for payment option one, the Commission could also require SWL&P to work with Commission staff and file an embedded cost analysis, breaking down avoided wholesale costs for energy, capacity, and transmission, with both residential and commercial customer results for payment option two. The WPPI approach to avoided costs could be used as the basis of the Superior Solar bill credits for both residential and commercial customers who choose payment option two. Alternatively, the Commission could choose the bill credit approach approved for NSPW, WP&L, or another approach per Commission discussion.

Commission Alternatives – Payment Option Two

Alternative One: Accept SWL&P's proposed payment option two, with bill credits based on the full energy charge of the participating customer's class

Alternative Two: Accept SWL&P's proposed payment option two, but direct SWL&P to use WPPI's approach for bill credits, and work with Commission staff to file an analysis of avoided costs of energy, capacity, and transmission in order to value residential and commercial bill credits.

Alternative Three: Accept SWL&P's proposed payment option two, but direct SWL&P to use an alternative approach for bill credits based on Commission discussion.

Alternative Four: Do not accept SW&P's proposed payment option two.

Superior Solar – Payment Option Three

SWL&P also proposes payment option three, in which the participating customer chooses to pay the same reservation fee of $122.04 per kW as the other two payment options, with no additional upfront or flat monthly fee, and agrees to pay a fixed charge per kWh for subscribed project production for the duration of the contract. SWL&P calls payment option three a "fixed charge per kWh," which is essentially a locked-in price of $0.1430 per kWh for solar production from the project. This payment option would be most appealing to customers who want to pay as little as possible upfront, and have price certainty regardless of future rate increases that may occur over the course of the contract. As described above in the section on payment option one, option three does carry both an undersubscription and contract cancellation risk for SWL&P, as the customer can cancel its subscription contract at any time without ability for SWL&P to collect the remaining subscription payments unless another customer takes up the subscription.

The fixed charge per kWh for payment option three is the same regardless of customer class, and reflects the levelized revenue requirement of the project on a kWh basis. SWL&P provided its calculations for this fixed charge per kWh in response to Commission staff data request AMK-1.1, with all the revenue requirements levelized in the Subscription Pricing tab of the spreadsheet. (PSC REF#: 386279.) SWL&P calculates that the all-in fixed charge of the project is $0.1506 per kWh. However, after the reservation fee of $122.04 per kW is removed from the calculation, the levelized fixed charge is $0.1430 per kWh, which SWL&P has proposed for payment option three.

The SWL&P calculation for the levelized fixed charge per kWh includes several assumptions, such as: (1) the present value of all costs of the project over the 25-year useful life, (2) the present value of all future revenues paid by option three customers over the 25-year contract, (3) all the same rate of return and other financial assumption used for the other payment

options (as described below in the Project Financing, Revenue Requirement, and Accounting Treatment section), and (4) energy production assumptions integral to the project's performance, such as an initial 18 percent capacity factor[3] that degrades over time.

SWL&P assumes a 3.0 percent degradation in the project's production from year one to year two, in which the capacity factor is 17.46 percent in year two, with 0.5 percent annual production degradation thereafter. By the 25th and final year, SWL&P assumes the project's capacity factor will be 15.48 percent as a result of these production degradation assumptions. For example, SWL&P assumes that for the first full year of energy production (year two), the project will generate about 718,863 kWh total with a 470 kW nameplate capacity. SWL&P projects the project will degrade in annual generation to about 530,861 kWh in the final year of its 25-year useful life and contract availability.

Commission staff has reviewed these capacity factor assumptions, and based on a review of Energy Information Administration, Form 861 data, there is no comparable evidence of historical production from similar solar installations in Wisconsin or Minnesota. The only basis of comparison that Commission staff could obtain is based on recently filed NSPW annual reports in docket 4220-TE-101 regarding its community solar program. NSPW's Eau Claire project was the only portion of NSPW's program fully operational for all of 2018 and 2019. NSPW's project is a fixed (non-tracking) installation, like SWL&P's proposed project, and has a direct current capacity rating of 1,000 kW, with a 770 kW alternating current rating.

Based on a 770 kW alternating current nameplate capacity rating, and a reported 1,029,138 kWh produced in 2018 and 978,220 kWh produced in 2019, this NSPW Eau Claire solar project achieved a 15.26 capacity factor in 2018, and 14.50 capacity factor in 2019 based on its alternating

[3] Capacity factor = Annual production / (Capacity * 8760 hours in a year)

current capacity rating. (PSC REF#: 365490) (PSC REF#: 388607.) Several factors could explain the difference between NSPW's Eau Claire project's actual capacity factors and SWL&P's assumed capacity factors for its proposed project, such as maintenance issues, cloud cover and amount of solar insolation, differences in vendor technologies, etc. Commission staff does not have additional northwestern Wisconsin solar production data in order to present a more robust analysis and comparison for SWL&P's proposed capacity factor assumptions at this time.

When a customer is deciding which payment option is right, they will want to compare the fixed charge per kWh of payment option three against the customer's current energy charge, as well as the potential for customer class energy charge increases (or decreases) authorized by the Commission over the course of the 25-year contract. For example, SWL&P's present flat energy charge for residential customers is $0.1150 per kWh. If SWL&P's proposed $0.1430 fixed charge per kWh is approved by the Commission, residential customers who choose payment option three would initially pay just over 24 percent more for energy from the project than they would pay with the flat residential class energy charge, which could be considered a premium price for using solar energy. However, if one assumes that the flat residential energy charge will increase over the course of the 25-year contract, the difference between future customer class energy charges and the fixed energy charge per kWh will shrink over time, along with the actual premiums prices in future years.

The bill credit for payment option three does not interact on the customer's bill the exact same way that it works for payment options one and two described above. Like payment options one and two, payment option three will also reduce the net amount the customer must pay as billable kWh energy units applied to customer class energy charges. If the customer uses 502 kWh of electricity, and the subscribed portion of the project produces 103 kWh, only the difference of 399 kWh is applied to residential customer's $0.115/kWh energy charge.

However, rather than no ongoing fees such as payment option one, or a flat $16.25 per month such as payment option two, the option three customer is still obligated to pay the fixed charge per kWh for the 103 kWh produced by the subscribed portion of the project. The fixed charge per kWh is essentially a substitute for the applicable energy charge that the customer would have paid for the 103 kWh. As the project produces varying amounts of kWh each month, the customer must pay varying amounts, as the proposed fixed charge of $0.143 per kWh is applied to varying energy production.

Payment option three would likely be less appealing to commercial customers, which generally have lower energy charges[4] than residential customers, as the proposed fixed charge per kWh is the same for all customer classes. This results in higher price premiums for commercial classes than residential classes. For example, SWL&P's General Service customers may find some appeal in payment option three, as their flat energy charges are only slightly lower than residential at $0.1126 per kWh. However, SWL&P's largest commercial customer class (EP5) has on-peak and off-peak energy charges that range between $0.0387 and $0.0621 per kWh, which would result in larger price premiums when compared to the proposed $0.1430 fixed charge per kWh for payment option three. Larger commercial customers may find payment options one or two more appealing because of this, and as mentioned above SWL&P assumes most commercial customers will choose payment option one, the upfront payment.

SWL&P's fixed charge per kWh for payment option three is comparable to MGE's community solar program, known as Shared Solar, previously approved by the Commission. The Commission recently approved an expansion and modification of MGE's Shared Solar

[4] Commercial customers generally have lower energy charges than residential customers because commercial customers have higher fixed customer charges, as well as additional demand charges that residential customers do not have.

program with a fixed charge per kWh that is different from SWL&P proposed method. MGE's approved method incorporates the levelized cost of a solar project on a kWh basis, but also includes a grid electricity charge that adds $0.025 per kWh to the total fixed charge per kWh. MGE's initial Shared Solar 1.0 program quickly became fully subscribed with a long wait list. This caused MGE to propose additional solar capacity and modification of the program for Shared Solar 2.0.

MGE proposed the grid electricity charge because MGE claims that participating Shared Solar customers are still "all requirements" customers of MGE, and these customers will still rely on MGE's entire generation fleet for capacity purposes. MGE estimated that solar projects associated with customers' participation will supply half of the customers' capacity needs, and that the other half of the customers' capacity needs will come from other MGE generation resources. Stated on page 4 of the Commission's Final Decision, the grid electricity charge "is meant to reflect the fact that the Shared Solar portfolio will provide roughly half of the capacity services associated with the energy produced, and the other half will come from MGE's existing generation fleet." This assumes that typical solar installations have a 50 percent capacity rating during summer peak events. The Commission agreed and ordered MGE to cap the grid electricity charge at $0.025/kWh and lower the charge if supported by future embedded cost-of-service analysis in future rate cases. (PSC REF#: 373113.)

Table 2 below is a comparison of SWL&P's proposed fixed charge per kWh for payment option three in comparison with MGE's Shared Solar charges.

Table 2 Comparison of MGE's and SWL&P's Charges

Utility	Total Capacity (MW)	Upfront Payment/kW	Rate ($/kWh)
		MGE Levelized Cost	$0.076
		+ MGE Grid Charge	$0.025
MGE Total Charge	4	$189	$0.101
SWL&P Total Charge	0.47	$122	$0.143

Although there are similar upfront payments between the two programs (SWL&P calls it a reservation fee) the levelized cost of MGE's solar projects of $0.076 per kWh is just over half the levelized cost of SWL&P's costs on a kWh basis. However, MGE's approved grid electricity charge increases the effective total solar energy charge for MGE's Shared Solar program to $0.101 per kWh, which is still less than SWL&P's proposed $0.143 per kWh.

Despite a higher total fixed charge per kWh than MGE's Shared Solar program, SWL&P does not propose anything similar to an additional grid electricity charge approved for MGE's Shared Solar program. This poses a somewhat similar risk as described above for payment options one and two providing higher bill credits than other utility community solar programs. Other utilities with upfront payments provide a portion of the customer's energy charge as a bill credit because their solar projects only supply a portion of the customer's capacity needs. MGE, with a fixed energy charge per kWh that is similar to SWL&P's payment option three, has a grid charge based on the assumption that their solar project cannot supply all the customer's capacity needs, and their participants must also pay a portion of the costs associated with MGE's entire generation fleet.

If the Commission agrees that the project will only cover half of SWL&P's subscribers' capacity needs, and that SWL&P must still pay capacity costs for the other half of the subscribers' capacity needs, the Commission may wish to consider directing SWL&P to adopt a similar method that MGE was approved for, and add a grid electricity charge. This could be accomplished either during SWL&P's next rate case when a cost-of-service study will be filed and new rates decided, or the Commission could order SWL&P to study costs and work with Commission staff to propose a grid electricity charge within 90 days of the Commission's order in this case. Since SWL&P does not own a generation fleet, it is dependent upon purchased

power. As a result, an equivalent grid electricity charge could be based on half of SWL&P's identified purchased power costs related to the demand for capacity.

If the Commission accepts payment option three, the primary Commission alternatives are: to accept SWL&P's proposed fixed charge per kWh, to direct SWL&P to work with Commission staff to establish an additional grid electricity charge based on half of SWL&P's capacity costs, or to direct SWL&P to implement a different methodology for payment option three based on Commission discussion.

Commission Alternatives – Payment Option Three

Alternative One: Accept SWL&P's proposed payment option three, with a fixed charge of $0.143 per kWh.

Alternative Two: Accept SWL&P's proposed payment option three, with a fixed charge of $0.143 per kWh, and direct SWL&P to work with Commission staff to establish an additional grid electricity charge based on half of SWL&P's capacity costs per kWh.

Alternative Three: Accept SWL&P's proposed payment option three, but direct SWL&P to use an alternative methodology for determining the fixed charge per kWh based on Commission discussion.

Alternative Four: Do not accept SW&P's proposed payment option three.

Project Financing, Revenue Requirement, and Accounting Treatment

The revenue requirement impact of the project is estimated to be $2.067 million, or 3.13 percent of SWL&P's estimated 2020 electric revenues. In response to Commission staff data request NAS-1.2, SWL&P provided a breakdown by account of gross plant. (PSC REF#: 383932.) In the gross plant breakdown, SWL&P had placed $80,900 in Account 340 (Land and Land Rights). Commission staff would recommend the $80,900 be placed in Account 341

(Structures and Improvements), as Account 340 does not have a depreciation rate associated with it, and the $80,900 is to make the land ready for the solar project. SWL&P's revenue requirement in Exhibit C (PSC REF#: 381980) correctly depreciated the $80,900.

SWL&P issued an RFP for engineering, procurement, and construction of the proposed community solar project including startup and commissioning services. SWL&P invited seven bidders to review the RFP process and three bidders' submitted proposals. Commission staff requested copies of the bid proposals, and after review of SWL&P's response to Commission staff data request NAS-3.2, Commission staff verified that SWL&P elected the most economical proposal.

In response to Commission staff data request NAS-3.3, SWL&P acknowledged that that the utility considered other ownership possibilities for the project, such as third-party financing or purchase of power through an independent power producer, but chose utility ownership as the best business case for gaining utility ownership experience. SWL&P stated that it "ultimately determined that owning and operating a small renewable asset would provide valuable operating, reporting and regulatory experience should SWL&P pursue additional generation ownership in the future." (PSC REF#: 387839.)

SWL&P would not utilize the investment tax credits (ITC) until 2033. SWL&P is a wholly owned subsidiary of ALLETE, Inc. (ALLETE) and utilization of the ITCs is determined on the ALLETE consolidated federal tax return. Under IRS normalization rules, SWL&P cannot begin amortization of the ITCs until utilized on the tax return. Under the tax credit ordering rules, ALLETE must utilize older tax credit carryforwards first, and the utilization of SWL&P's federal ITCs is not anticipated until 2033. (PSC REF#: 383932.) Once utilized, the tax benefit of the ITCs would be amortized over the remaining book life of Superior Solar, resulting in a reduction to tax expense.

SWL&P is requesting a rate of return of 7.77 percent. The 7.77 percent is the weighted average cost of capital authorized in SWL&P's last rate proceeding, docket 5820-UR-115. (PSC REF#: 355880.) SWL&P used the authorized weighted average cost of capital to stay consistent with what SWL&P has historically used when modeling potential projects.

SWL&P does not believe there would be any cross-subsidization between participants and nonparticipants. In response to Commission staff data request NAS 2.1, SWL&P states: "All costs of the community solar garden (Superior Solar), including revenue requirements, will be included in the participants' set rate over 25 years." (PSC REF#: 386497.) SWL&P indicated that it expects Superior Solar to be fully subscribed, and anticipates most commercial customers will sign up for option one with an upfront payment. This would result in SWL&P capturing a majority of the initial capital costs at the beginning of the project. SWL&P believes the rate design for all three payment options, described below, ensures the remaining costs of the project are equitably spread to customers during their use of, and benefit from, Superior Solar. Commission staff would note, however, that if Superior Solar is not fully subscribed, there is potential for cross-subsidization between participants and nonparticipants. As described above, most Wisconsin utility community solar program quickly become fully subscribed, although New Richmond does still have subscription blocks available.

Commission Alternatives - Project Accounting Treatment

Alternative One: Accept SWL&P's proposed accounting treatment, without modifications or conditions.

Alternative Two: Accept SWL&P's proposed accounting treatment, but direct SWL&P to use Commission staff's recommendation that $80,900 of gross plant be placed in Account 341 (Structures and Improvements).

Alternative Three: Accept SWL&P's proposed accounting treatment, with modifications and conditions consistent with the Commission's discussion.

Reporting and Other Conditions

SWL&P proposes to provide annual reporting for the Superior Solar program including updates on construction, current number of subscribing customers by customer class (residential or commercial), capacity under subscription, and number and type of customers on the waiting list. Commission staff believes this is a reasonable approach and is similar to the Commission's approved reporting requirements for WP&L's community solar program. NSPW was also ordered to report on solar production for their approved community solar program. Since production from the project would be important for participating customers' energy credits, the Commission may wish to consider requiring additional reporting on prior-year monthly project production and calculated monthly and annual capacity factors. This reporting requirement will help SWL&P, participants, and the Commission better understand actual solar capacity factors versus those assumed for projects before they are built.

Commission Alternatives - Reporting Requirements

Alternative One: Accept SWL&P's proposed annual reporting requirements, without modifications or conditions.

Alternative Two: Accept SWL&P's proposed annual reporting requirements, with additional reporting on prior-year monthly project production and calculated monthly and annual capacity factors.

Alternative Three: Accept SWL&P's proposed annual reporting requirements with modifications or conditions per Commission discussion.

Alternative Four: Do not require any reporting requirements or additional conditions.

After Commission discussion and decisions on SWL&P's proposal with possible modifications and conditions, the Commission may choose to accept SWL&P's application without modifications and conditions, with modifications and conditions as discussed by the Commission, or deny SWL&P's application.

Commission Alternatives - Superior Solar Program and Project

Alternative One: Accept SWL&P's application to implement a community solar garden program without modifications or conditions.

Alternative Two: Accept SWL&P's application to implement a community solar garden program with modifications and/or conditions per Commission discussion.

Alternative Three: Deny SWL&P's application to implement a community solar garden program.

MRD:AMK:cmb:jlt:DL: 01727063

Key Background Documents
Application for SWL&P Community Solar Garden "Superior Solar" - PSC REF#: 381979
Notice of Investigation Signed and Served 1/23/2020 - PSC REF#: 382706
Order on Request to Intervene Served 2/25/2020 - PSC REF#: 384541
Response-Data Request-PSC-Schuster-3 (REDACTED COPY) - PSC REF#: 387839
Final Decision signed and served 5-27-15 - PSC REF#: 236916
Final Decision signed and served 8-21-15 - PSC REF#: 273771
Final Decision Signed and Served 07-19-19 - PSC REF#: 372550
2019 Annual Report - PSC REF#: 387520
Final Decision signed and served 04-01-2016 - PSC REF#: 284022
Final Decision Signed and Served 07-30-19 - PSC REF#: 373113
Response to Data Request PSC-Schuster-1 - PSC REF#: 383932
Superior Solar - Exhibit C - PSC REF#: 381980
Final Decision signed and served 12-20-18 - PSC REF#: 355880
Response-Data Request-PSC-Schuster-2 - PSC REF#: 386497
Response-Data Request-PSC-Kell-1 - AMK 1.3 Example bill 1 Block - PSC REF#: 386280
Response-Data Request-PSC-Kell-1 - AMK 1.1 - PSC REF#: 386279
Final Decision signed and served 12-28-18 - PSC REF#: 356192
Solar*Connect Community Pilot Program Annual Report for Year End 2018 - PSC REF#: 365490
Solar*Connect Community Pilot Program Annual Report for Year End 2019 - PSC REF#: 388607